

The diagram illustrates a stirred reactor with a water jacket. The central stirrer shaft is equipped with four circular blades. The reactor is surrounded by a water jacket. Various ports and valves are labeled: 'FEED' at the top, 'sight glass' on the right, 'water jacket' at the bottom, 'air' and 'steam' at the bottom right, and '12', '13', '14', '15' at the top. A pump is connected to the water jacket inlet.

Figure 1. Bio-reactor for ethanol production using BPSC-15 yeast.

[illegible]



Figure 2. Process flow schematic for molasses to ethanol with 20% vinasse recycle

Figure 3. Osmolality of beet molasses as a function of molasses solids- model versus data.

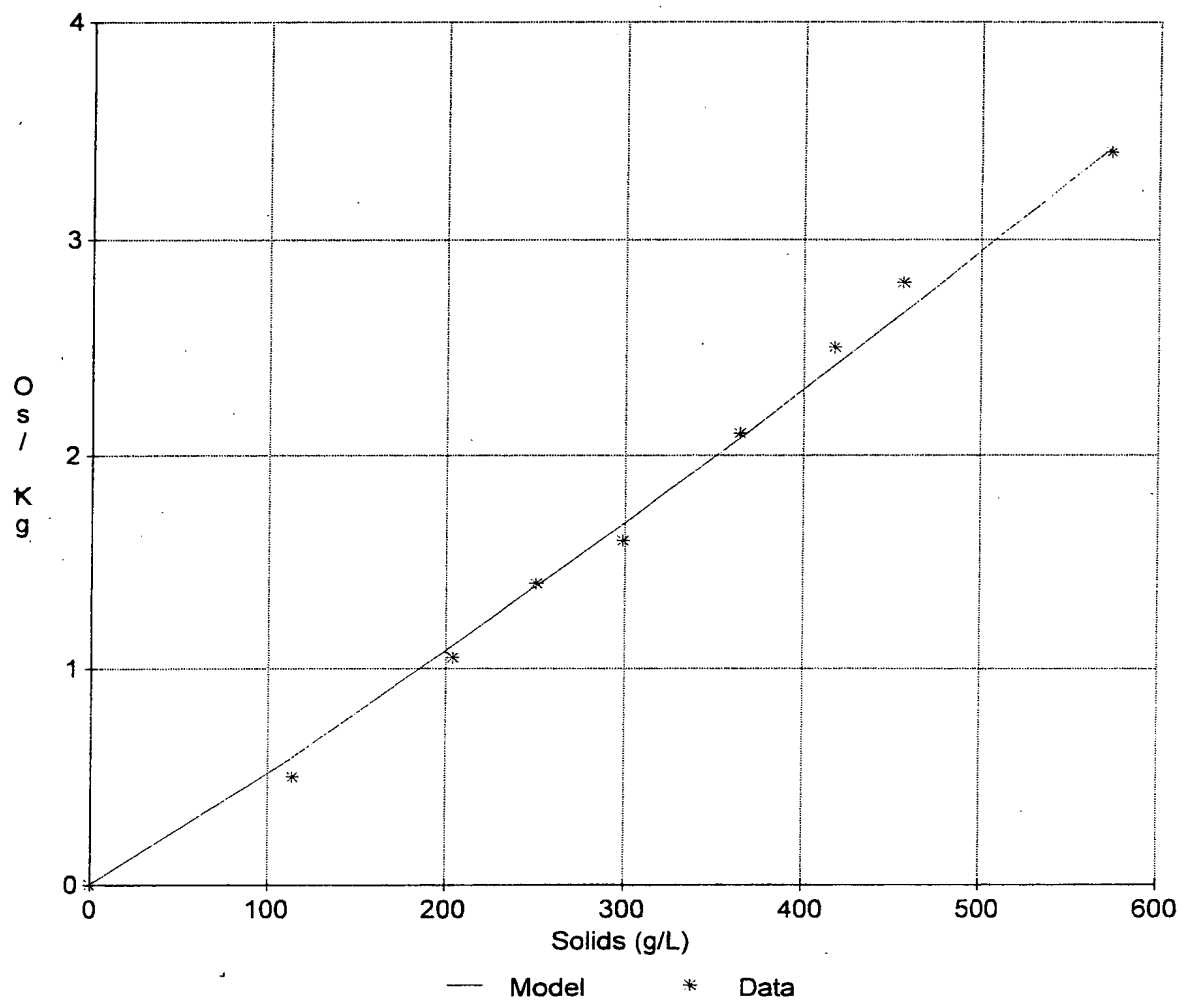


Figure 4. Consecutive Batch Mode (CBM) fermentation of beet molasses- data from 3 consecutive fermentations.

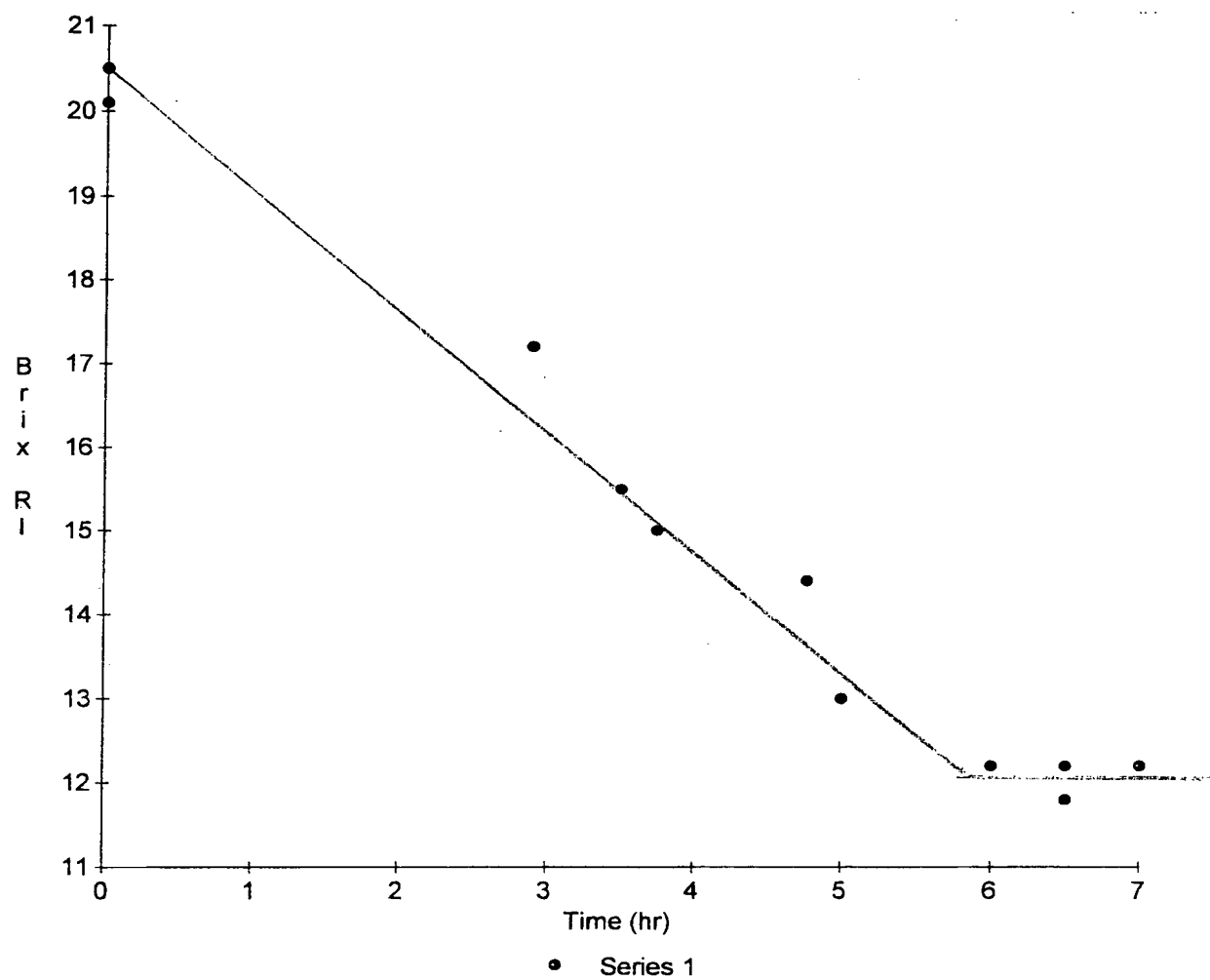
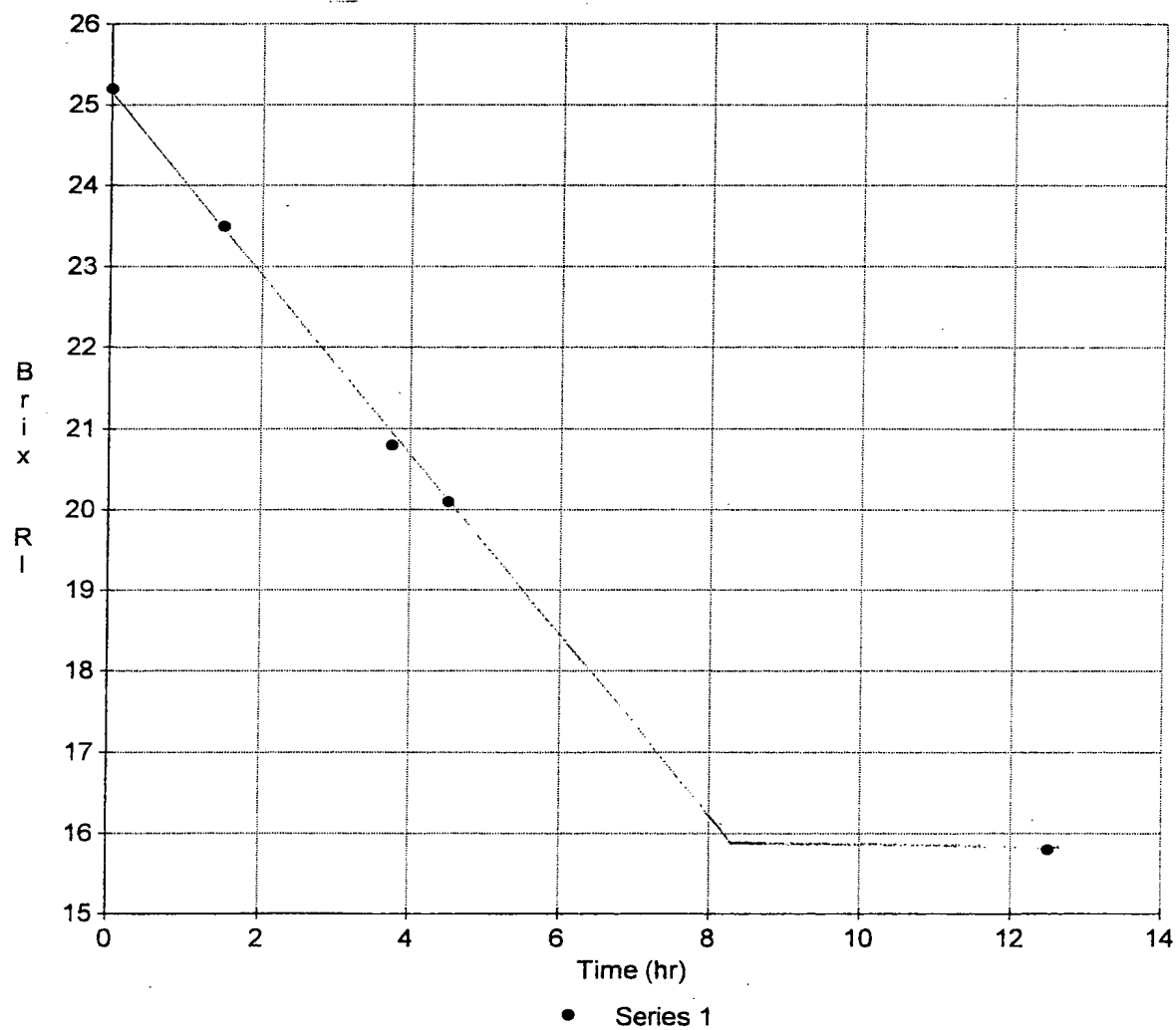


Figure 5. Consecutive Batch Mode (CBM) fermentation of beet molasses with 30% vinasse recycle.



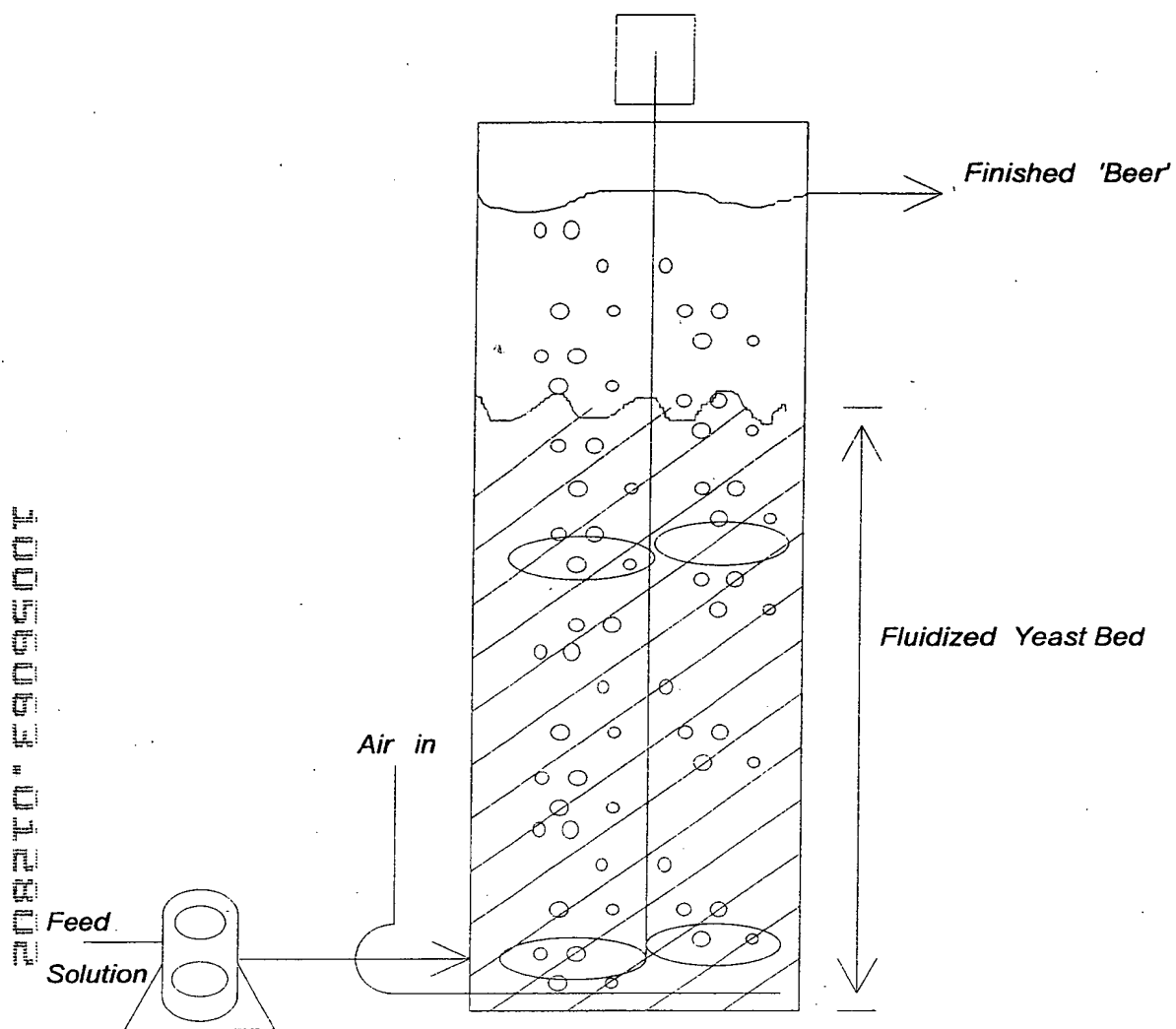


Figure 6. Schematic of Tower Reactor with a fluidized yeast bed.